

# NATIONAL IMAGINATION COMPUTER CLUB

\* 515 Studylane Barrington Illinois 60010

JUNE 1982

If you have a program for sale be sure to include all the pertinent information. At a minimum a description of the program, the price, (including shipping and handling) and your name and address.

Remember, that only 1 program per member will be published in each newsletter.

We have also received programs without documentation. Please be sure to include a description of what the program is supposed to do and how to make it do it. We can each guess as before we publish it and if we can't get it to run we don't publish it. Also, if at all possible label your programs on tape with your name & address labeled on the tape, as well as the name and tape location of the program. Submitting a tape will eliminate having someone else pick it up. Tape is properly labeled it will be sent back to you with our thanks.

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## ANSWERS/TIPS FROM CLUB MEMBERS

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FROM Ernest E. Smith of Texas

Ernest gives us the following tip:

"I have encountered a glitch in the exponential function of my [M-1] Basic. When raising some numbers to a power of 3 or greater, wrong answers are typically resulted. A function is needed (is not being properly cleared) for example,  $1.00E-100$  /  $100200000.0070$  =  $1.00154$  results in an overflow.

Avoid using the exponential function and by simply multiplying the number by its inverse for negative exponents) by itself "n" times overcomes this failing. the special case of 0.00 can be accounted for by an IF statement."

In the programs section of this letter you will see how another member applied this tip.

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FROM Jerry's T.V. of Minnesota

Jerry offers his technical expertise by providing answers to questions that have come up in previous newsletters.

It is possible, with internal modification to hook up a monitor. Although the IM-1 is limited to 16K, it is possible to convert the IM-1 to 16K internally.

Considering Penguy Carroll's problem where the I.V. goes crazy and resets itself, Jerry recommends checking the timing/multiplexor chip.

Jerry has a tape as well as a disk to check the whole machine, also a cartridge which checks RAM only. He also has several items for sale, (see ITEMS FOR SALE SECTION).

#### **SPECIAL FEATURE-HOW TO UPGRADE TO 16K INTERNALLY**

FROM John F. Jarrett of Arizona

John substantiates Jerry's answer on the internal expansion, by explaining exactly how to do it.

John states "I further have an idea I would like to express to you and other members, which can save them money on additional RAM.

In the APP IM-10 are eight 4115 RAM IC's which are 8K by 1 bit. These IC's are the dynamic type of RAM. There is a direct replacement, (almost), for the 4115 and that is the 4116. This IC is a 16K by 1 bit IC which can easily be interlaced into the IM-10, by removing the 4115's and simply replacing them with the 4116's. However, more must be done in order to access the full 16K of available memory inside the 4116.

The CAS controls the output state of the 4115 and 4116, and also is the control for the additional RAM expansion. The CAS in the IM-10 is 150 ns pulse width. The minimum required for the fasted 4116, which is 150 ns access time. Therefore, an HM4116-08P will suit the bill or any other 4116 with a 150 ns access time. Usually, eight 4116's can be obtained through a reliable supplier for under \$20.00.

The next step is to add an AND gate with the inputs of this gate going to U1 on the schematic, pins 10 and 11. The third on the P.C. board must be cut between P6 and pin 10 of U1. The output of the AND gate must be placed on the P6 side of the cut. Pin 10 of U1 should go to the high side." (See schematic next page)

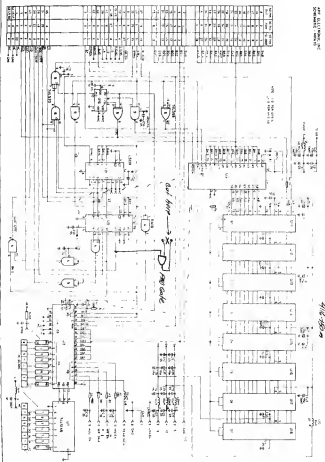


Figure D-3  
MPA-10 Main Board Schematic  
PAGE 3

To answer a question sent in by Robert E. Jones of Chicago,

We had stated in an earlier newsletter that we had 2000 pins and a printer hooked up with 2 8080s while alone left time. The RMIC cartridge does not take up a slot in the Building Block. We did not have the 8K expansion plugged in, so since the 91-232 took up one slot and the mini-stamps take up the other there were 2 of the four in the building block remaining.

To answer a question for Vincent A. McFadden of Washington

The commands for directing output to the printer are

PRINT#1 To direct to printer  
PRINT#0 To direct to screen

Also, Mr. McFadden would like to know if anyone has any information regarding sources for 6000 based programs.

From Mail Monday

We would like to know how to keep characters from moving off the screen or moving off one side of the screen and onto the other. He has made use of pages rather than plots to speed up character movement. Can anyone help?

#### **SPECIAL FEATURE-A LIST OF SUBROUTINE ADDRESSES**

Our special thanks to Norman Smith of Tennessee who compiled the list on the following two pages. Mr. Smith states these were obtained from the Technical Manual and the Basic Index documentation.

Mr. Smith would like to know if anyone has any further subroutines that are not contained in the Technical manual. If you do, please send it in to the club and we will publish it.



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1 INPUT FROM KEYS, RETURN TO PC A
2 * 0173 33907
3 OUTPUT CHARACTER TO SCREEN
4 * 0174 34010
5 KEYS, PAPE MOTOR AND AUDIO
6 * 0500 40001
7 TAPE MOTOR AND AUDIO OFF
8 * 0501 34728
9 READ TAPE INTO MEMORY AT "HIGH" AND "LOW" ADDR
10 * 0502 34128
11 WRITE MEMORY CONTENTS TO TAPE FROM "HIGH" AND
12 "LOW" ADDRESSES
13 * 0503 34138
14 WRITE HEADER, 512 BYTES BASED ON WORD FLAG,
15 160 BYTES TO TAPE
16 * 0504 34725
17 READ TAPE, FIRST 512 BYTES TO BUFFER, PAGE TO
18 MEMORY
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[illegible]

Is there a way of clearing out or two places on the screen without clearing the whole thing? I was developing a graphics program and didn't know how to clear a space on the screen.

What other systems have been described using this 6-keV microgenerator as a beam?

It is an open question as to what day to do these things.

THE END OF THE WORLD

本報記者王宇中報導，位於台北市中山區、由前總統府秘書長陳水扁所創辦的「陳水扁紀念館」，日前正式對外開放，吸引不少民眾前往參觀。該館位於前總統府秘書長陳水扁的故居，佔地約一萬餘坪，建築風格獨特，充滿了濃厚的歷史文化底蘊。館內展示了陳水扁先生的生平事跡、政治理念以及為台灣社會所做的貢獻。此外，該館還設有展覽廳，定期舉辦各類文化藝術展覽，為民眾提供了一個了解台灣歷史文化的窗口。目前，該館已成為台北市的一處熱門景點，吸引了眾多遊客前來參觀。

COMPUTER STOOLS 5 95 4 legs  
like a short  
bar stool with  
plus 2.00 FOR FREIGHT buckles black seat  
was 14.00  
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\*\*\*\*\*

# AMORTIZATION SCHEDULE

.....from HAROLD BLOOM OF CALIFORNIA

Word of advice, when inputting your interest rate, type as follows - .125 = 12.5%, .140 = 14%, etc.

```
10 INPUT "ANNUAL INTEREST RATE IE .125 =12.5%",A
20 INPUT "TOTAL NO. OF PMTS",N
30 INPUT "LOAN AMOUNT",L
40 P=1
50 B=A/12
60 C=B+1
70 FOR I=1 TO N
80 P=P*C
90 NEXT
100 P=1/P
110 P=1-P
120 P=P/B
130 M=L/P
140 M= INT (M*100+.5)/100
150 PRINT USING 164,M
160 :MONTHLY PAYMENT =****.
170 INPUT "NO. OF STARTING MONTH IE, JAN =1, FEB=2 ETC.",D
190 INPUT "FIRST YEAR",Y
195 PRINT "YEAR INTEREST BALANCE"
200 E=15-D
202 LB=L
205 B=0
210 FOR J=1 TO E
215 N=N-1
220 R=LB*B
230 P= INT (R*100+.5)/100
240 LB=LB+R-M
245 S=S+R
250 IF LB<M THEN P=LB:LB=0 GOTO 280
260 NEXT
280 PRINT USING 290,Y,B,LB
290 :****.
291 Y=Y+1
292 IF LB<M THEN GOTO 325
295 IF N<12 THEN GOTO 320
305 E=12: GOTO 205
320 E=N: GOTO 205
325 P=P+P*B: IF E<12 THEN Y=Y-1
330 PRINT USING 340,E,Y,P
340 :FINAL PMT OCCURS IN MONTH ** OF YEAR*** AND IS ****.
350 END
```

\*\*\*\*\*

SOMEWHERE MY LOVE

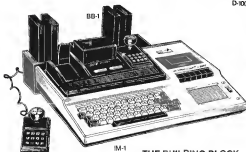
.....also from HAROLD BLOOM OF CALIFORNIA

Another word of advice, when keying in this program, count all of the zeros first, it is very hard to type them otherwise. Yes, this does play "SOMEWHERE MY LOVE" through you T.V.

```

10 FOR I=1 TO 2
20 MUSIC "7000000020000000+6070000000000000 +40006000500020000 +1010000000000000"
30 MUSIC " "
40 MUSIC "100000000200000000+40000000000000 30002000+10002000*107000000000000"
50 MUSIC " "
60 MUSIC "7000000020000+6070000000000000 +40006000500020000+1010000000000000"
70 MUSIC " "
80 MUSIC "10000000200000000+40000000000000 70002000+10002000*107000000000000"
90 MUSIC " "
100 MUSIC "30000000500000000000 60005000+40005000000030000000200000000000"
110 MUSIC " "
120 MUSIC "20000000400000000000 +40005000+4000500060000000+60000000*10000000000000"
130 MUSIC " "
140 MUSIC "7000000002000000+6070000000000000 +400060005000200000+1010000000000000"
150 MUSIC " "
160 MUSIC "100000000200000000+40000000000000 30002000+10002000*107000000000000"
170 MUSIC " "
180 MUSIC "700000000200000+6070000000000000 +40006000500020000+1010000000000000"
190 MUSIC " "
200 MUSIC "10000000200000000+40000000000000"
210 MUSIC " "
220 IF I=2 GOTO 300
230 MUSIC "30002000+1000100000+405000000000000"
240 MUSIC " "
250 NEXT I
300 MUSIC "30002000+1000100000000000 600000005000000000000000000000"
800 RUN "MENU"
999 END

```

**APF****APF APF**

IM-1

### THE IMAGINATION MACHINE (IM-1)

Exciting, personal, home computer for home management, entertainment and education. User-programmable in BASIC or uses APF software cassette programs. Features 9K RAM, 14K ROM, 53-key keyboard, 32 characters x 16 line screen format, alpha numerics in up to 8 colors. Built-in sound synthesizer, built-in tape deck, 2 game-style hand held controllers.

### TELEPHONE MODEM (TM-150)

The APF modem (modulator/demodulator) allows you to hook up the computer to a remote terminal over telephone lines and access time-sharing services or trade programs with a compatible computer.

### THE BUILDING BLOCK (BB-1)

This expansion device lets you use your APF Imagination Machine to its fullest degree. Easily plugged into the machine and requiring no additional power supply, it contains four universally adaptable ports for peripheral drive cartridges.

For example, a cartridge, enabling hookup to any stand-alone printer or telephone modem. Ports can also hold cartridges for 8K RAM memory and mini-floppy disk drive.

TM-150



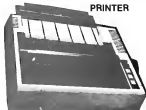
D-100



### MINI-FLOPPY DISK DRIVE (D-100)

Each APF mini-floppy disk drive gives you 72,000 bytes of additional storage capacity plus loading and accessing of data within seconds. Industry standard mini-floppy connections.

PRINTER



### The EPSON MX

The MX-80, shown above, is an 80-column bidirectional printer featuring the full 96-character ASCII set with descenders for easier reading, and offers a user-defined choice of 40, 66, 80 or 132 columns.

One of the biggest breakthroughs offered by the MX-80 is the world's first disposable print head. After its 50-million-character life expectancy, you simply buy a new one for under \$30 and replace it yourself in seconds.

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(FACTORY SPONSORED)

1982

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Expires 12-31-82

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INFORMATION FURNISHED: LATEST PRODUCT DEVELOPMENTS TO ENHANCE AND EXPAND THE CAPABILITIES OF THE NEW 23K APF IM-1 COMPUTER. KEEPING UP WITH LATEST DEVELOPMENTS AND PROBLEMS FROM ALL SOURCES.

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### AFFICANT

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CITY \_\_\_\_\_ STATE \_\_\_\_\_

PHONE NO. \_\_\_\_\_

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A MONTHLY COMPUTER CLUB LETTER IS ISSUED, STARTING FEBRUARY 1982. IF NEW INFORMATION IS IMPORTANT ENOUGH WE WILL ISSUE MORE FREQUENT LETTERS.

MAIL TO: CLUB PRESIDENT  
JOE BADGER  
515 W. SHADY LANE  
BARRINGTON, IL 60010  
PHONE: 312/382-5244

*JUNE CLUB LETTER*

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June 1, 1982

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- C. 8K RAM Expanders! In Stock!
- D. S1-232 Serial Interfaces! In Stock!
- E. FI-100 Disk Interfaces! In Stock!
- F. D-100 Mini Floppy Disk Drives In Stock!
- G. All Tape and Cartridge Programs In Stock!

## GREAT NEWS FROM PROTECTO!!

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- A. All owners can buy at "Club Prices"
- B. "Club Members" get an Special 10% Discount Off Club Prices!
- C. "Club Members" get Special Hardware prices!
- D. "Club Membership is reduced to \$10.00 June 1, 82 through 12-31-82- If you join NOW! you get Club Prices on this sale!

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**APF**

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